

dévoûte l'illustre Institut de France constituent des liens à la fois parmi les plus puissants et les plus durables qui unissent les nations dans le maintien de la paix et de la cordialité. Comme représentants de ces différentes branches de culture intellectuelle en Angleterre, nous sommes heureux et fiers d'être en rapports intimes avec l'Institut de France, depuis si longtemps l'un des grands foyers de lumière du monde entier.

Nous nous réjouissons à la pensée que les sentiments de sympathie et de fraternité qui se sont maintenus depuis plusieurs siècles entre les littérateurs, les savants et les artistes de la France et de la Grande Bretagne s'étendent et se fortifient journellement entre nos deux nations, et nous sommes persuadés que votre visite ne peut manquer de stimuler puissamment le progrès de cette alliance pacifique et bienfaisante.

Nous vous prions, Monsieur le Président, de vouloir bien nous permettre d'ajouter l'expression de notre ferme espoir que votre occupation du poste élevé dont vous remplissez les fonctions avec tant de lustre et de distinction continuera longtemps à être heureuse et prospère; et nous espérons qu'il vous sera agréable de recevoir l'assurance que la nation Britannique est unanime dans ses sentiments d'admiration et d'amitié pour la nation Française.

Nous avons l'honneur d'être avec le plus profond respect,

Monsieur le Président,  
Vos très obéissants serviteurs.

The Address, which was beautifully illuminated, had been approved by the President and officers of the Royal Society and the President of the Royal Academy. The organisation of the deputation and the correspondence connected with it were undertaken by the British Science Guild.

#### NOTES.

THE local secretaries for the Dublin meeting of the British Association desire to direct the attention of officers of the association and members who intend to be present to the urgent necessity of filling up and returning forthwith the post-card sent out with the invitation circular. Many have already done so, but the work of the hospitality subcommittee, which has to be completed months beforehand, and, as everyone knows, is of a delicate and difficult nature, is now, at a standstill owing to the fact that information has not been received from a large number of the chief members of the association as to whether they will be accompanied by lady members of their families or not. This information is asked for on the card referred to, which is the only source at the command of the local committee.

A STATUE of Liebig is to be erected in Darmstadt, where he was born in 1803. The corporation of Darmstadt has contributed 150*l.* towards the expenses.

THE death is announced of Dr. R. Chalmers, of the Canadian Geological Survey, at the age of seventy-four years. Dr. Chalmers, says *Science*, joined the survey about twenty-three years ago, and conducted work in Pleistocene geology, especially in his native province of New Brunswick.

AT the anniversary meeting of the Linnean Society on Monday the King of Sweden was elected an honorary member of the society. Dr. Dukinfield H. Scott, F.R.S., was elected president in succession to Prof. W. A. Herdman, F.R.S., and Dr. Otto Stapf, F.R.S., was chosen

to fill the office of botanical secretary thus vacated by Dr. Scott. The gold medal of the society was presented to the Rev. T. R. R. Stebbing, F.R.S.

A REUTER message states that an International Association for Cancer Research was inaugurated in Berlin on May 23 to promote the investigation of cancer and the care of cancer patients, the collection and publication of international cancer statistics, and the establishment of an international centre of information on all matters concerning cancer research. The association proposes to publish an international technical organ, and to organise international cancer conferences. So far, thirteen States, including all the great Powers except Great Britain, have joined the association, the seat of which will be at Berlin.

THE inauguration of the International Institute of Agriculture took place in Rome on May 23 in the presence of the King of Italy, who formally opened the new building for the use of the permanent delegates. The *Times* correspondent reports that the Italian Government was represented by seven ministers and the chief State officers. Thirty foreign delegates, including Sir Thomas Eliot, representing Great Britain, attended, and were entertained at dinner by the King. The new building is the gift of the King of Italy, who also has endowed the institute with an income of 12,000*l.* a year, bringing the total annual income up to 40,000*l.* The international character of the institute is assured by the fact that it is receiving the support of every nation, and nearly all have appointed delegates. It was only in June, 1903, that the conference assembled in Rome at the invitation of the King of Italy to consider the project, and the excellent progress which has been made already augurs well for the permanent success of the institute.

THE Royal medals and other awards given annually by the Royal Geographical Society for the encouragement of geographical science and discovery were distributed at the anniversary meeting of the society on Monday. The founder's medal was presented to Lieut. Boyd Alexander, for his African explorations and careful trigonometrical survey of the region between the Benue and Lake Chad. Lieut. Boyd Alexander devoted a considerable time to the exploration of Lake Chad, and added materially to our knowledge of that constantly shifting lake. A careful study was made of the hydrography of the various river systems, the Niger, the Congo, and the Nile, through which the expedition passed. Detailed maps were made of the more unknown parts of the region, such as the Bamingi, Kibali, and the Yei rivers. Much information was gathered concerning the physical features of the region passed through; careful studies were made of several of the types of natives, and important additions were made to our knowledge of the natural history of the extensive region. The patron's medal was awarded to H.S.H. the Prince of Monaco, for his work in oceanography. Among the notable additions to scientific knowledge made on board the *Princess Alice* are:—(1) the results of using the deep-sea traps invented by the Prince, which threw a new light on the life on the floor of the deepest parts of the ocean; (2) successive seasons' exploration on the coast of Spitsbergen and in the adjacent seas; and (3) studies of the conditions of the upper air by means of meteorological kites in mid-Atlantic. Other awards were as follows:—Murchison award to Colonel Delmé-Radcliffe, for his work when as resident in the Nile province of Uganda he mapped the whole province, and for the work which he did afterwards when in charge of the English section of

the Anglo-German Boundary Commission, between Victoria Nyanza and Mount Ruwenzori. The Gill memorial to Dr. T. G. Longstaff, for his exploring work in the western Himalayas and Tibet, and especially on his last expedition in the Garhwal Himalayas, when he ascended the summit of Trisul. The Back bequest to Lieut. George Mulock, for his long-continued work, mostly during his own time, in preparing the six sheets of the Antarctic charts, showing the results of the *Discovery* expedition. The Cuthbert Peek grant to Rai Sahib Ram Singh, a native Indian surveyor, who has done excellent surveying work on the expeditions of Captain Deasy, Dr. Stein, Captain Rawling, and Major Ryder.

AT the conclusion of a description in part iv. of vol. lxxxix. of the *Zeitschrift für wissenschaftliche Zoologie* of the remarkable land-planarians of the genus *Rhynchodemus*, Dr. W. E. Bendl, of the University of Gratz, points out that certain curious variations in the secondary genital structures of the members of this and the allied genera appear to be correlated with geographical distribution. In one group the male copulatory organs are found to be of much simpler structure than in a second assemblage, and it appears that while the former type is in the main characteristic of the Oriental and Australasian species, the latter is dominant in the eastern Holarctic and Ethiopian forms.

WE have received a copy of an excellent little biographical pamphlet, by Prof. W. May, of Karlsruhe, entitled "Auf Darwin-Spuren," and forming part xiv. of "Gemeinverständliche Darwinistische Vorträge und Abhandlungen," published at Braekwede-i-W. by Dr. W. Breitenbach, the editor. The part before us is illustrated with portraits of Darwin's father and grandfather, and with reproductions of photographs of the Darwin statue at South Kensington, and of the house at Shrewsbury where the great evolutionist was born. Whether by intent or by accident, the fasciculus appears very opportunely in relation to the impending "jubilee" of the reading of the "origin-of-species papers" by Darwin and Wallace at the Linnean Society.

WE have been favoured with a copy of a pamphlet (without printer's or publisher's name) describing the laboratory established in 1901 at Sutton Broad, Norfolk, by Messrs. Eustace and Robert Gurney for the study of fresh-water biology, in which it is announced that the gentleman last named will be pleased to arrange for the accommodation of naturalists desirous of working on this branch of research, no charge being made for the use of the laboratory. A considerable amount of work has already been accomplished in connection with the tidal system of the district, and its past and present effects on the fauna of the Broad. The crustaceans, beetles, and dragon-flies, and to a certain extent the rotifers and hydrachnids of the district, have formed the subjects of investigation, but much remains to be done in connection with the molluscs, turbellarians, and protozoans.

FROM the Entomological Bureau of the U.S. Department of Agriculture we have received Circular No. 99, dealing with nut-weevils, and from the West Virginia University Agricultural Experiment Station Bulletin No. 110, devoted to the grape-vine root-borer. Two species of weevil do considerable damage to chestnuts, of which large quantities are now grown in the States, and various methods of checking the multiplication of these pests are suggested. Hazel-nuts are attacked by an allied, but shorter-bodied and shorter-beaked, weevil. The grape-vine root-borer is one of the clear-winged moths, and a species indigenous

to North America, where it doubtless originally infested wild vines. The caterpillars burrow long tunnels in the roots of vines, to which they do very serious damage, for the most part quite unknown to the cultivators. The cultivation of races of vine immune to the attack of root-borers is recommended.

IN a recent number of Records of the Indian Museum (vol. i., part iv., No. 23, December, 1907), Captain R. E. Lloyd describes and figures, under the name *Nudiclava monocanthi*, a remarkable new genus and species of hydroids, which has been found parasitic on a fish, *Monocanthus tomentosus*. The hydroid consists of a basal cœnosarcal plate attached to the skin of the fish, and from the basal plates arise the hydranths and the gonophores. The hydranths are entirely devoid of tentacles, and have a peculiar histological structure; thus *Nudiclava* resembles greatly *Hydrichthys mirus*, described by Fewkes, but differs in the gonophores being sporosacs, while *Hydrichthys* produces free medusæ. In the Memoirs of the Indian Museum (vol. i., No. 2) Captain Lloyd describes the anatomy of the gigantic marine isopod *Bathynomus giganteus*.

THE April number of the *Emu* is illustrated by a reproduction from a photograph of a nest of the brown flycatcher (*Micraeeca fascinans*) containing two eggs laid by



Nest and Eggs of Brown Flycatcher, with Egg of Square-tailed Cuckoo.  
(Nearly natural size.)

the rightful owner, and a third deposited by the square-tailed cuckoo (*Cacomantis variolosus*). The size of the nest admits of only three eggs; and it is stated in the same issue by Mr. E. M. Cornwall that in the case of an allied flycatcher (or "fly-eater") and the bronze-cuckoo, the former bird normally lays a clutch of three eggs, but only two of them are found in a nest containing a cuckoo's egg. What becomes of the third egg is not stated. In the case of the nest photographed, the difference between the colour of the cuckoo's and the flycatcher's eggs, as shown in the accompanying reproduction, is very marked, while the small size of both is very noticeable.

THE third volume of Notes from the Royal Botanic Garden, Edinburgh, is devoted to a history of the garden and biographies of the principal gardeners from the year

1756. The concluding portion now issued is mainly concerned with William M'Nab, who was deservedly esteemed both for his capabilities as a gardener and for his personality. He was a noted authority on heaths and hard-wooded plants. The papers he published on the planting of hardy evergreens and the cultivation of Cape heaths are printed as an appendix to his biography.

THE list of new garden plants introduced during the past year has been issued in the usual form of an appendix (No. 3) to the *Kew Bulletin* for 1908. The record includes new species of *Bulbophyllum* and *Eria* from Malaya and India; species of *Lewisia* are products of the United States, and a large number of cactus specimens under the genera *Echinopsis*, *Echinocactus*, *Mamillaria*, and *Phyllocactus* have been introduced from Mexico, Argentina, Paraguay, and other States of South America. Among the small quota from China there occur species of *Rhododendron*, *Viburnum*, and *Berberis*.

WITH the view of making known the results of investigations upon tropical American ferns as they are undertaken in the National Herbarium at Washington, it is proposed to issue a series of studies similar to the series "Studies of Mexican and Central American Plants." The work is being entrusted to Mr. W. R. Maxon, and the first part is published as vol. x., part vii., of Contributions from the United States National Herbarium. The part contains critical notes on uncertain genera and species. The limits of *Asplenium salicifolium* and the identity of *Asplenium rhizophyllum* are discussed. A number of new species are diagnosed, and the new generic name *Anthoncarus* is suggested for *Pteris angustifolia*.

AN article contributed by Mr. F. Ramaley to the University of Colorado Studies, vol. v., No. 2, describes the plant distribution in the north-east of Latimer County, in Colorado. The altitude varies from five to six thousand feet; the soil of the district is derived from sedimentary rocks, largely Red Sandstone, except in parts where granite rocks occur. The prevailing formation is a scrub of *Cercocarpus latifolius*, dotted in parts with *Pinus scopulorum*; grasses and species of *Artemisia* clothe the valleys, but along the streams bushes and trees, such as species of *Pseudotsuga* and *Salix*, find a congenial habitat. The Cercocarpus scrub grows densely on the sandstone soil, but is almost absent on the granite; lichens and *Selaginella*, on the contrary, prefer the granite areas.

IN *Man* for May Mr. D. I. Bushnell describes an ancient site at Kimmwick, Missouri, with curious remains of an ancient salt factory. The vessels used are remarkable as having an impression of cloth on the outer surface. It is supposed that a depression was first made in the earth or sand of the size and form of the vessel desired. The hollow was then lined with cloth, over which was spread a thin layer of clay previously mixed with pulverised shell and sufficient water to make it of the proper consistency. When the vessel became dry and was taken from the mould the cloth would be removed, the impression of which, however, would remain on the outer surface. The extensive cemetery adjoining the factory seems to belong to a branch of the Shawnee tribe, who probably made salt on this site.

THE March number of *Buddhism*, the organ of the International Buddhist Society, which advocates the propagation of the faith in the West, contains a remarkable article by Mrs. Rhys Davids on "The Value of Life in Buddhism." The more advanced school of Buddhists have come to see that the current conception of Nirvâna as the

cessation of sentient existence is a fatal obstacle to the acceptance of the Dharma in Europe. As the writer observes:—"It is hardly conceivable that the West will call such a creed anything but pessimistic, so long as the West retains its peculiar view of life, and its conception of the essential immortality of the self." Hence she proposes to define Nirvâna as "the perfected state of the individual mind and heart, emancipation from all taint of lust, ill-will and illusion." She endeavours to show that Buddha, "in judging human individuals capable of realising, now and again, a perfected humanity independently of any transcendental outlook, raised life, or the possibilities of life, to a very high value." The editor, in a very cautious criticism of this theory, seems to prefer to believe that "Buddha and his advanced hearers beheld an interminable series of lives, with Nibbâna as the goal." It seems unlikely that this attempt to put new wine into old bottles will be accepted by the orthodox thinkers of the East. But in view of the current belief in the immobility of eastern faiths, the new development is certainly interesting.

MR. F. COHEN, of Bonn, has published a beautiful contoured map of the Eifel, including Aix-la-Chapelle, Coblenz, and Trèves, on the scale of 1 : 200,000, prepared from the Government Survey by Dr. H. Rauff. The height-zones are shown in clear shades of colour, the contours being drawn at every fifty metres. For geographers and cyclists, who may often be happily combined, this large sheet, published at 3 marks, is a really notable achievement.

PROF. H. POTONIE has issued a fourth and enlarged edition of his brochure entitled "Die Entstehung der Steinkohle" (Borntraeger, 1907, price 4 marks). This is illustrated in the best sense by a number of landscape views of actual vegetation in swamps, bogs, and forests, with examples of stems found *in situ* in Coal-measures. A strong case is made out for the theory of the production of coal-seams in place and not by flotation, and stress is laid on deposits of "sapropelite," from the decay of various water-loving organisms and their excrement. A form of carbonaceous rock results which in turn provides petroleum. All who have to do with coal may read this little book with pleasure, and they will be especially grateful for the care with which the illustrations have been brought together and reproduced.

THE results of the meteorological observations made at Mount Tsukuba (Japan) during 1903 have recently been received; at the peak station (869.5 metres) and at the base hourly observations are given, at the middle station (240 metres) for every two hours. The volume contains an interesting discussion by Mr. T. Okada of a typhoon that swept over the eastern part of Japan on September 28, 1902, with a violence that had not been experienced for many years. An interesting fact is that the storm centre passed very near Mount Tsukuba (lat. 36° 12' N., long. 140° 5' E., approximately), so that the atmospheric condition at the summit and base stations could be determined. On the same day another violent cyclone appeared over the western part of the islands.

THE *Denkschriften* of the Vienna Academy of Sciences, vol. lxxxii., contain a very valuable contribution to the meteorology of west Turkestan, compiled (at the suggestion of Dr. J. Hann) by Heinz v. Ficker from the Russian meteorological year-books and other sources, and based on observations between 1894 and 1903 at seventeen stations. The area, which embraces 8½° of latitude and

$17\frac{1}{2}^{\circ}$  of longitude, and differences of altitude amounting to 3600 metres, is subject to great contrasts of climate, e.g. at Pamirski Post, in the south-east, the mean yearly temperature is  $29^{\circ}.8$  F., and at Termez, in the south,  $63^{\circ}.9$ ; the mean yearly variation (difference of warmest and coldest months) is  $68^{\circ}.2$ , at Kasalinsk, in the north-west, and  $40^{\circ}.9$ , at Prschewalsk, in the north-east. The whole country has a very small rainfall, averaging from about 5 inches on the Steppes to  $14\frac{1}{2}$  inches in the districts of the Naryn and Lake Issykul. The author states, with reference to the cultivation of the land, that the small rainfall and rapid evaporation give rise to the gravest fears for the future of the country.

DR. A. STOCK announces in part ii. of the *Verhandlungen der deutschen physikalischen Gesellschaft* for 1908 that he has succeeded in producing a material which, while porous to air and other gases, will not allow mercury to pass through it at pressures less than 1 atmosphere. It is composed mainly of clay, water-glass, and gum burnt together, and can be substituted for the taps and other appliances used in the manipulation of gases. The material withstands acids and boiling water, can be fused directly to glass, and is about five times as porous as that used by Dr. K. Pritz for the same purpose two years ago.

IN France the Société d'Encouragement granted a subvention for a research on the gases occluded in steels, and the results of the work, by Dr. G. Belloc, of the University of Caen, are published in the current issue of the Bulletin (vol. cx., No. 4) of the society. The gases, he finds, consist of mixtures of carbon dioxide, carbonic oxide, hydrogen, and nitrogen, and the liberation of the gases is in intimate relation with the critical points of iron. Carbon dioxide is liberated first at about  $550^{\circ}$  C., and forms the great bulk of the volume present. Nitrogen begins to appear at  $550^{\circ}$ . More gases are given off by the steel taken from the centre of an ingot than from samples nearer the surface.

THE Physical Review for April contains a study of the changes of the electrical resistance of selenium cells by Messrs. F. C. Brown and J. Stebbins, of the University of Illinois. They find that pressure diminishes the resistance at a rate nearly constant up to about 400 kilos. per sq. cm., and that the cells are somewhat less sensitive to light at high than at low pressures. Increase of temperature in the neighbourhood of  $20^{\circ}$  C. produces a rapid decrease of resistance, which becomes less marked as the temperature gets higher. The sensitiveness to light decreases as the temperature rises, and appears to be a function of the resistance of the cell, whether that resistance is determined by the temperature, pressure, or illumination of the cell. Radium and hydrogen peroxide both decrease the resistance of a cell to a remarkable extent.

MESSRS. MACMILLAN AND CO., LTD., have published the forty-fifth annual issue of "The Statesman's Year-book," that for 1908. Its character is described excellently by its subtitle—"Statistical and Historical Annual of the States of the World for the Year." The volume has been enlarged again; more space is devoted to the British Empire and the United States. An account of the changes in the organisation of the British Army has been included, and the returns of the recent French census of 1906 are given. Some thirty pages of additions and corrections contain the most recent available statistics, among others those of public education in England and Wales. The maps and diagrams are, as usual, a very attractive feature. Three diagrams deal in a luminous manner with important

matters in connection with the British Navy, and some interesting comparisons with the naval strength of other countries are shown graphically. It would be valuable and instructive if next year the editor, Dr. J. Scott Keltie, could provide similar diagrams comparing the United Kingdom with Germany, the United States, and other great countries, so far as the provision of higher education is concerned. We know of no subject in which statesmen stand more in need of instruction; and we are sure that a graphical comparison of the expenditure on higher education and scientific research, of the percentage of the population receiving higher technical instruction, and similar matters would show that while we apply the two-power standard to the arts of war, we are behind other progressive nations in the provision made for the arts of peace through higher education and science.

A FOURTH edition of Prof. E. Hammer's "Der logarithmische Rechenschieber und sein Gebrauch" has been published by Mr. Konrad Wittwer, of Stuttgart. The volume deals with methods of using logarithms and the slide rule, and their application to various forms of calculation. No tables are provided. The price of the book is one mark.

WE are glad to see a column devoted to science of the week in the *Standard of Empire*, the first number of which appeared on Saturday last. The new periodical, which is published at the *Standard* office, will appear as a gratis supplement every Thursday in that newspaper, and will also be issued separately as a weekly journal devoted to Imperial affairs.

WE have received from Mr. Robert Sutton, 43 The Exchange, Southwark, S.E., the fourth part of the first volume of Dr. E. Howard Adye's "Studies in Micro-petrography." This fasciculus contains pages 29-36 of the first volume, and two full-page plates. The rocks dealt with are ophitic diabase, andesitic dolerite, fine olivine-basalt, and ophitic olivine-dolerite.

MESSRS. A. AND C. BLACK are publishing a second edition of "Studies in Fossil Botany," by Dr. D. H. Scott, F.R.S. The work, the first edition of which was reviewed in NATURE of November 15, 1900 (vol. lxiii., p. 53), will in future appear in two volumes. The first, dealing with the Pteridophyta, is now ready, and its price is 6s. net; the second volume will be published, it is expected, next autumn, when we propose to review the complete work.

MESSRS. CASSELL AND CO., LTD., have commenced the publication, in twenty-four fortnightly parts, price 7d. net each, of "The Nature Book." The work is to be a popular description by pen and camera of the beauties of outdoor nature. Among numerous contributors we notice the names of Messrs. Walter Crane, Richard and Cherry Kearton, and Dr. W. J. S. Lockyer. The first part reaches a high standard of excellence. The letterpress is interesting and accurate, while the illustrations are abundant and beautiful. The publication should secure a wide popularity, and prove of real service to teachers of nature-study.

THE first volume of the fifth edition of Prof. Wundt's "Grundzüge der physiologischen Psychologie" appeared in 1902, and was noticed in NATURE of November 6, 1902 (vol. lxvii., p. 2). The second and third volumes of the same edition were reviewed in 1905, with Prof. Titchener's translation of the work (vol. lxxi., p. 529). The first volume of the sixth revised edition of this elaborate work has now been received from the publisher, Mr. W. Engelmann, Leipzig. Nearly two hundred pages have been